Chromatin Dynamics of Endocrine Disruptor Compounds on Estrogen Receptor Function

Principal Investigator: Burd, Craig J	
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DESCRIPTION (provided by applicant):	A woman's overall lifetime exposure to estrogen is a critical risk factor for the development of breast cancer. A number of environmental compounds, termed endocrine disrupting compounds (EDCs) have been shown to bind and activate the estrogen receptor and are thus implicated in breast cancer tumorigenesis. However, it has become clear that EDC activation of the estrogen receptor induces ligand-specific transcriptional programs. It is our hypothesis that chromatin structure is a key regulator of endocrine, disruptor action in breast cancer development and progression. In this proposal, we will use an unbiased genomic approach to characterize chromatin structure in breast cancer cells following treatment with bisphenol A and genistein. EDC responsive regions will be characterized for chromatin modifications and nucleosome positioning. Finally, the effects of long term exposure to both bisphenol A and genistein on estrogen receptor recruitment will be examined. These studies will clarify the mechanisms by which EDCs elicit specific transcriptional profiles in the breast.
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Publications	See publications associated with this Grant.
Program Administrator	Frederick Tyson (tyson2@niehs.nih.gov)